Facilities Quarterly

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY◆FACILITIES DIVISION NEWSLETTER

APRIL
2003

LAB REMODELS MAKE SPACE FOR THE FUTURE

"State-of-the-art research requires state-of-the-art laboratories," says Danica Truchlikova. As Facilities Architectural Section Chief, Truchlikova speaks from experience. The Architectural Section, which also includes architects Kathy Milano, John Musante, and Nick Peterson, plays a key role in planning and designing laboratories for everything from genomics to nanoscience—laboratories for the next generation of research at Berkeley Lab.

"Designing modern laboratories that meet the ever-more-demanding physical and environmental requirements of research can be a challenge," says Truchlikova, "especially considering that large numbers of buildings on the hill date back to the 40s, 50s, and 60s."

Adding to the complexity of laboratory remodels and conversions is the shortage of space on the Hill. According to Facilities space planner Dick Dicely, occupancy runs at close to 100 percent. "We will do our level best to locate new laboratories in a building where the division already has a presence," says Dicely, "but we're basically out of space."

Even when a space is found, it often was never intended to be a laboratory.

Building 64, for example, is a 50s office building that was recently converted to laboratory space for the Drosophila Project. It has a ceiling clearance of about 10.5 feet, less than the normal laboratory clearances of 12 to 14 feet needed for process and building utilities. In addition, the building structure wasn't designed to carry the weight of utility equipment. "We had to be creative," says project architect John Musante. "The original building wasn't designed to support the deadload, so we placed a pad mount

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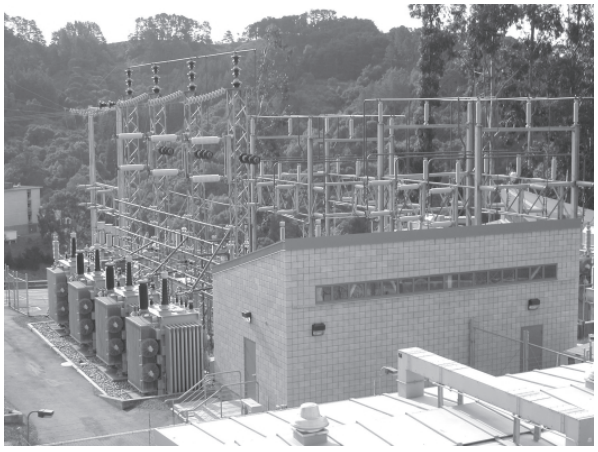
GRIZZLY SUBSTATION POWERS UP

As of April 17, Berkeley Lab is once again drawing its electrical power from Grizzly Substation, following completion of $6 million in upgrade work that began in 2000. Berkeley Lab was supplied from UC Berkeley's Hill Area Substation while construction was in progress.

Located on Glaser Road near Building 77, Grizzly Sub's high-voltage lines, towers, transformers and switchgear supply electricity to the entire Berkeley Lab site. Two banks of transformers receive power from PG&E's 115-kV transmission lines, step it down to 12 kV, and distribute it through multiple 12-kV feeders to a number of switching stations. Transformer Bank 1, rated 30/40/50MVA, provides power for pulsed loads such as the Advanced Light Source. Bank 2, also rated 30/40/50 MVA, provides power to all other uses on the Hill

With a total capacity of about 60 MVA, Grizzly Substation is big enough to supply a small city, promising stable, reliable power for Berkeley Lab's current programs and enough excess capacity to meet Berkeley Lab's needs well into the century.



Grizzly Substation

INSIDE

Facilities Quarterly is available online at http://www.lbl.gov/Workplace/Facilities.

LAB REMODELS *continued from page 1*

outside the building and routed as much of the utilities outside the building as possible." The result was a flexible research work space up to about 9.5 feet.

Sometimes a combination of creative design and space planning can loosen the laboratory space logjam. In Building 70A, Kathy Milano recently collaborated with architect Warren Ng of the Facilities Small Projects Group in converting a machine shop into separate laboratories for the Life Sciences and Earth Sciences divisions. Milano notes that creating the new laboratory spaces was "…the first in a series of moves that will collocate several laboratories with related divisional functions."

Although sometimes difficult to achieve in Berkeley Lab's older buildings, flexibility is an important objective in laboratory design. As Musante explains,"Because the life of a research program is tied to grant money, and is sometimes just a year or two, we have to think about adaptive reuse, so we design for flexibility." In addition, the fast pace of today's research makes it necessary to build in as much flexibility as possible to accommodate whatever direction future research might take.

At the Joint Genome Institute in Walnut Creek, Musante was faced with just this problem: designing laboratories for equipment that was still being developed. His solution provided standard-sized lab areas with modular, demountable walls, movable lab benches, and overhead utility grids that allow all utilities—air, deionized water, gas, data, and electrical—to be dropped down wherever needed.

Finding creative solutions to difficult design problems is a team effort that begins at the project's inception. Programming, as the process is called, begins with an interview between the client and, usually, a Facilities architect, that documents the client's requirements for space, equipment, utilities, and future needs such as expansion and convertibility. According to Truchlikova, "The first step for us is to get as much understanding as we can about the research that will be conducted in the new laboratory. This enables us to provide meaningful input during this predesign stage of the project."

The Facilities project team then

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From the Division Director …

Safety remains one of the most prominent core values for Facilities. The creation and maintenance of a safe working environment for Facilities staff, contractors and the Laboratory community are of the utmost importance to all of us. To that end, there are some significant changes to the worker safety program that are taking place or will occur in the near future.

First, Facilities Safety Coordinator Bill Birbeck is moving to EH&S full-time in an expanded role. Bill's expertise in crane, forklift, traffic and other industrial hygiene specialties will be folded into a broader portfolio for him and a larger section of the Laboratory will benefit from his skills. Bill's pending departure from Facilities leaves a significant gap in the coordination and leadership of our WOW (Workers Observing Workers) program. Bill has been instrumental in the implementation and development of this program into a proactive and passionate team of Facilities staff who strive for worker safety and who participate enthusiastically in the worker observation components. To capitalize on the staff's commitment and ensure that the WOW program continues to prosper, recruiting of a new Safety Coordinator will begin immediately. This position will be an internal recruitment that emphasizes selecting an employee from the ranks, who will have the opportunity to develop advanced facilitation and safety skills and integrate them into the workplace. Previous WOW participants and steering committee members are encouraged to apply. The ideal candidate for this unique position will combine field work experience, a passion for safety, and a desire for personal development. The position will be mentored by Carole Fried, EH&S Facilities liaison, and Guy Bear, Deputy Director.

Second, Facilities will be expanding the WOW program to include more management participation. As a result of input from WOW Steering Committee members, managers will be trained and will participate in the worker observations as peers. In addition, a new management safety committee will be formed to engage a broad range of managers in a process of participation and accountability outside of their normal range of responsibilities. The goal is to fully engage all Facilities staff in an expanded safety effort and ensure that managers share equally with staff in the success and advancement of the WOW program.

Please join me in helping to make this renewed effort a resounding success.

George Reyes

AT YOUR SERVICE

FACILITIES DIVISION

Facilities provides Berkeley Lab with a full range of architectural and engineering, construction, and maintenance services for new facilities and for modification and support of existing facilities.

Architectural and engineering services include facility planning, programming, design, engineering, project management, and construction management. Maintenance and construction functions include custodial, gardening, and lighting services; operation, service, and repair or replacement of equipment and utility systems; and modifications, alterations, and additions to buildings, equipment, facilities, and utilities. Additional services include bus and fleet management, mail distribution, stores distribution, property management, property disposal, cafeteria operations, and electronics repair.

Ongoing Facilities activities include renewal and upgrade of site utility systems and building equipment; preparation of environmental planning studies; in-house energy management; space planning; and assurance of Laboratory compliance with appropriate facilities-related regulations and with University and DOE policies and procedures.

The Work Request Center expedites facility-related work requests, answers questions, and provides support for facility-related needs.

FOCUS ON SERVICE: Move Coordination

by Theresa Duque

At the Lab, our days usually revolve around the certainty of meetings and deadlines. But throw in an office move and our reliable work schedules get tossed to the wind. The easiest of tasks suddenly becomes a challenge when you find that everything you've come to rely on to do your job will soon be packed away, destined for that mysterious place of no return: the new office or laboratory.

Since its inception in 1995, the Facilities Move Team, headed by Move Coordinator Ron Woods, has relieved many of the headaches associated with moving. Woods can help anxious, time-challenged clients by contacting the various Lab departments and services required to make a move successful.

Coordination support can cover packing, moving, disassembling and reassembling office cubicles and furniture, telephone and network coordination, computer and phone drops, seismic restraints, labor and transportation, cleanup, and painting. Move estimates are free. A fee is charged for coordination support and moving services rendered. Requests for move coordination can be submitted to the Work Request Center (see box at bottom of page).

Once Woods is notified of the move request, he sets up a meeting with the client to discuss scheduling and the scope of the move. Woods recommends that clients know in advance where items should be placed, and that clients draw a room layout for posting on the new location's door. Woods can help develop a floor plan or identify problems such as inaccessible electrical outlets, phone plugs and network drops. Woods can also suggest furniture placement that conforms to fire code regulations. If a new location requires modification, custom shelving, or painting,

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COMPLIMENTS

Wim Leemans, Staff Scientist at the Center for Beam Physics, expresses his appreciation for the work of project manager Bill Wu and his project team on the Building 71 Modifications to L and M Caves. The project modified the caves L to accommodate installation of laser equipment. "The result," says Leemans, "is a laser laboratory… which, upon completion, will be one of the world's most powerful systems…."

Chemical Dynamics Beamline Director Steven Leone congratulates Bill Wu on a job well done in constructing his group's new laboratory in Building 2: "I especially appreciated and wanted to mention the outstanding technical work of Nick Peterson throughout the project and his excellent judgement about all aspects, even down to the pieces of furniture for my office. Fred Mecum was exceedingly helpful in sifting through the safety and code issues."

Nancy Sallee, Engineering Division Administrative Manager, expresses her appreciation for the "excellent

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WORK REQUEST CENTER

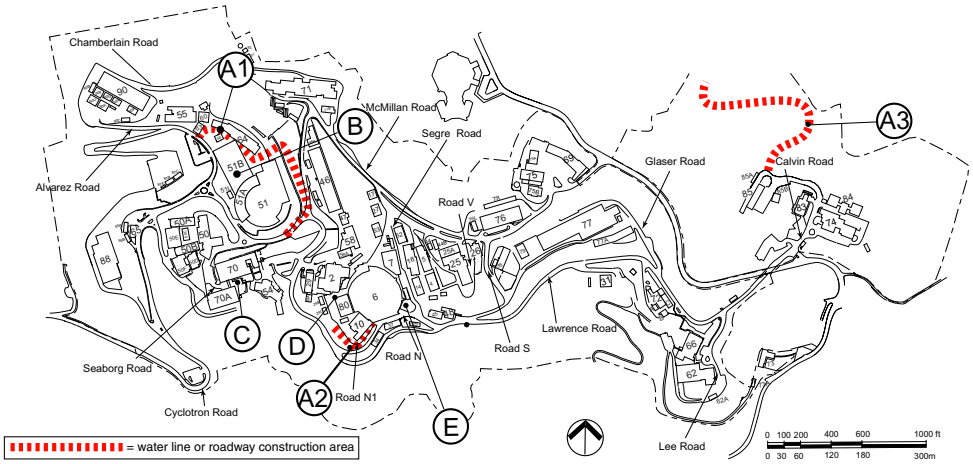
Telephone	6274
Fax	7805
E-Mail	WRC@lbl.gov
Mailstop	76-222
Web	web3.lbl.gov/wrc

The WRC welcomes questions or comments about Facilities Quarterly.

CONSTRUCTION AND YOU

Current construction projects affecting parking, or vehicular or pedestrian circulation

	JAN	FEB	MAR	PLANNED WORK
A1	✓	✓		Water line: B51, B64.
A2	✓			Water line: B10.
A3	✓	✓	✓	New access road & pipeline: East Canyon
--	✓	✓	✓	Fire sprinkler lines--water service: various bldgs.
--	✓	✓	✓	Isolation valves--water service: various bldgs.
--	✓	✓	✓	Cathodic protection--pipe isolation.



Project Contacts. The name in parentheses after each project is the Project Manager (PM) or other person who is responsible for project oversight: coordinating all phases from design through construction; controlling cost, scope and schedule; and ensuring client satisfaction. This person will be happy to answer any questions about the project.

(A) Sitewide Water Distribution Upgrade

APR	MAY	JUN

This major water supply system upgrade will intermittently affect traffic and pedestrian circulation, parking, and building water service.
(Charles Allen, x6438)

(B)

APR	MAY	JUN

Demolition and removal of excess materials is in progress inside Bldg 51 and the EPB Hall. The demolition and hard hat work areas are fenced off for safety. Fire equipment access lanes, indicated with red paint, are to remain clear—no parking or standing allowed. Parking in the lower Bldg 51 lot is restricted since the area is used for staging out of materials. Pedestrian traffic is not allowed through Bldg 51 or the EPB hall, as a safety measure. Large-truck traffic is expected beginning in March and continuing through June.
(Richard Stanton, x6221)

Bldg 70A: Wet and Culture Labs

APR	MAY	JUN

(C)

Parking spaces in the loading dock area between Buildings 70 and 70A will be used as a construction laydown area. (Bill Wu, x5216)

Bldg 6: Sector 4 Support Building

APR	MAY	JUN

(D)

Construction of an expansion to Bldg 6 will eliminate parking between Bldg 80 and Bldg 10. Parking spaces on the west side of Bldg 10 will be reserved as the contractor's laydown area. (Dan Galvez, 6213)

Bldg 6: User Support Space

APR	MAY	JUN

(E)

Trucks will use the driveway area on the southeast side of Bldg 6 intermittently for loading and unloading. Occasional obstruction of traffic may occur.
(Dan Galvez, 6213)

"CAUTION—CONSTRUCTION AREA"

Construction barricades and warnings are there for your protection. Under no circumstances should you cross a construction barricade, or disobey posted warnings or directions. Contact the Project Manager for escorted access to construction areas.

ON THE DRAWING BOARD

projects in study or conceptual design

Bldg 50X: Office Building

Project planning is continuing for a new 60,000-sq-ft office building to be designed and constructed by a private developer on the LBNL site adjacent to Cyclotron Road and near the Blackberry Gate. The building will contain four stories of offices and a fifth floor dedicated to conference rooms. A bridge will connect Building 50 to the fifth floor conference center. (Dave Tudor, x4171)

Building 77: Rehabilitation of Building Structure and Systems, Phase 2

This project will correct mechanical, electrical and architectural deficiencies in Buildings 77 and 77A. The conceptual design phase is completed. Funding has been requested for FY 2003. (Dan Galvez, x6213)

User Support Building

Planning is going forward on a new 30,000-sq-ft User Support Building that will be located adjacent to the ALS at the site of the current Building 10. The project will double the size of Building 10 and provide modern research support space and offices. Currently, the project is included in the DOE FY05 funding cycle, with a planned occupancy in FY08. The USB will support researchers at all of LBNL's User Facilities, and provide additional staging area for ALS experiments. (Dave Tudor, x4171)

IN PROGRESS

funded projects

Bldg 6: Advanced Light Source User Space

Construction is scheduled to begin in May to provide additional research support space in the ALS. Project completion is scheduled for October 2003. (Dan Galvez, x6213)

Bldg 6: South Side Expansion

A building addition containing hallway and lobby space will provide perimeter access around new beamlines 12.2.2 and 12.3.1. (Dan Galvez, x6213)

Bldg 31: NMR Installation

Funded for FY 2003, this project will build out the Building 31 high bay with an insulated enclosure that will house the 800-MHz NMR system and supporting utilities. (Bill Wu, x5216)

Bldg 64: Addition of Labs and Offices

Funded for FY2003, this project will build out the last high-bay space in Building 64, creating additional laboratories and office spaces. The scope includes addition of a second floor, a new elevator, rearrangement of exit paths, and removal of an injector from room 64-131. (Bill Wu, x5216)

Bldg 70A: Wet and Culture Labs

Approximately 2700 sq ft (250 sq meters) of shop space will be converted into an Earth Sciences wet lab, (1850 sq ft) and a Life Sciences cell culture laboratory (850 sq ft). (Bill Wu, x5216)

Bldg 943: First Floor Computer Room Buildout

Work consists of 3,000 sq ft (280 sq meters) of buildout to complete the Oakland Scientific Facility's first floor computer room. It includes extension of the seismically-enhanced three-foot raised computer flooring, ceiling systems, computer room HVAC systems, an underfloor chilled water system, network cable tray systems, laser-based smoke detection, underfloor fire sprinklers, connection of utilities, seismic restraint of the computer equipment, and support infrastructure. (Dave Tudor, x4171)

Sitewide Water Distribution Upgrade, Phase 1

Much of Berkeley Lab's fresh-water supply system has been in place for over 30 years. This project will replace about 0.9 mile (1.5 km) of cast iron pipe and upgrade the remaining 5 miles (8 km) of pipe, providing corrosion protection, new valves, pressure reducing stations, improvements to existing water storage tanks, and a new water storage tank in the East Canyon area. Construction is in progress. (Charles Allen, x6438)

LAB REMODEL

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works with the users to evaluate a range of concepts, working to arrive at the most efficient layout and utilities arrangement. The project team reviews the selected concept for code compliance, and works with users to confirm that the program requirements are met. The selected concept forms the basis for a conceptual estimate of construction costs.

After the concept and budget are reconciled and approved, the final development is contracted to an outside architect/engineer firm. The firm works with the users and the Facilities design team, which makes sure that the programmatic requirements are met and that the project complies with building codes.

Says Truchlikova, "The time spent up front in scoping the project pays down the line in a smooth design process and ultimately a well-functioning laboratory. Creating a laboratory that functions well and is visually pleasing, that makes the user happy and satisfied, is what motivates our architects and engineers."

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MOVE COORDINATION

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for example, Woods will arrange a meeting between the client and the necessary Facilities crafts. If the client requests additional furniture, Woods will check what's available at the Excess Property Warehouse.

For large moves, Woods recommends that the client appoint a move representative as the main point of contact. For any move, large or small, Woods suggests that the client complete a Move Directory Form, so that everyone involved has a record of what needs to be moved. The form also helps Woods determine where to put items in their new home.

In addition to moving office equipment and desktop computers, Woods can help clients coordinate moves of entire laboratories. Recently, Woods helped Vangie Peterson, facilities manager of Calvin Lab, move lab equipment, biosafety cabinets, and laboratory refrigerators from Calvin Lab on the U.C. Berkeley campus to Building 64 on the Hill.

Laboratories, which often house chemicals and sensitive, expensive equipment, require extra caution from everyone involved in moving them. Before moving lab refrigerators, biosafety cabinets, and chemicals, the Environment, Health and Safety (EH&S) Division must first be contacted. EH&S is responsible for packing and transporting any chemicals stored in the refrigerators and cabinets. Once the refrigerators, cabinets, or shelves have been safely cleared and cleaned of chemicals and their residue, Woods and his team will move the emptied storage units.

Woods also helped Peterson move four offices that were each occupied by three or four people. According to Vangie, "One of the people happened to be handicapped, and Ron just made things easier for everyone by giving extra help that was above and beyond duty."

Some clients have used Woods' devotion to his job for other purposes. According to Sally Areceneaux of Biosciences Administration, she and her group decided to show Woods their gratitude for his help during their 1999 move by honoring him with a SPOT Award (which is just one of many received by Woods) and a surprise party. "We tricked him into coming down here [to Building 941 in downtown Berkeley]. We said that we needed him to come down and fix a cabinet right away, and he did of course."

Woods attributes the Move Team's success to the excellent support provided by a number of groups around the Lab, including Plumbing, Painters, Electrical, Carpenters, Sheet Metal, Welding, Riggers, Lock Shop, Telephone Services, Network Services, Transportation, EH&S, and Facilities Planning.

COMPLIMENTS

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customer service we received from Ron Woods and his staff in December 2002. Ron planned and implemented a fairly complicated move for 10-plus Engineering staff within the Building 46 complex. The operation occurred flawlessly, due to Ron's expertise, professional demeanor and attention to detail."

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